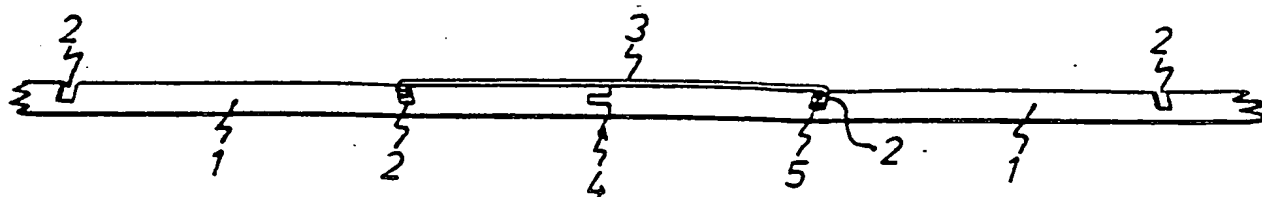




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>3</sup> : <b>E04F 15/14</b>	<b>A1</b>	(11) International Publication Number: <b>WO 84/ 02155</b> (43) International Publication Date: <b>7 June 1984 (07.06.84)</b>
<p>(21) International Application Number: <b>PCT/SE83/00423</b></p> <p>(22) International Filing Date: <b>2 December 1983 (02.12.83)</b></p> <p>(31) Priority Application Number: <b>8206934-5</b></p> <p>(32) Priority Date: <b>3 December 1982 (03.12.82)</b></p> <p>(33) Priority Country: <b>SE</b></p> <p>(71)(72) Applicants and Inventors: <b>CARLSSON, Jan [SE/SE]; S:t Sigfridsvägen 50, S-382 00 Nybro (SE). BJÖRKLUND, Christer [SE/SE]; Brunnsvägen 19, S-382 00 Nybro (SE).</b></p> <p>(74) Agents: <b>WIKLUND, Erik et al.; Awapatent AB, Box 5117, S-200 71 Malmö (SE).</b></p> <p>(81) Designated States: <b>AT (European patent), BE (European patent), CH (European patent), DE (European patent), DK, FI, FR (European patent), GB (European patent), LU (European patent), NL (European patent), NO, SE (European patent), US.</b></p>		<p><b>Published</b> <i>With international search report. In English translation (filed in Swedish).</i></p>

(54) Title: **DEVICE FOR JOINING TOGETHER BUILDING BOARDS, SUCH AS FLOOR BOARDS**



(57) Abstract

Device for joining together building boards, such as floor boards, edge surface to edge surface. It comprises a groove (2) in the rear side of each board (1), the groove running over the entire length of the board parallel to its jointing edge, and a substantially U-shaped spring device (3), the legs (5) of which are adapted each to engage the groove of one board, and which is prestressed so that, upon said engagement, the boards are tightly clamped together edge surface to edge surface.

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DEVICE FOR JOINING TOGETHER BUILDING BOARDS, SUCH  
AS FLOOR BOARDS

The present invention relates to a device for joining together building boards, such as floor boards.

For tight jointing of building boards, especially wooden floor boards, tongue-and-groove joints and glue are normally used. The laying of such boards is time-consuming because glue application is indispensable if a tight joint is to be achieved and, furthermore, the glued boards, once they are laid, cannot easily be taken up again.

The object of the invention is to provide a jointing device allowing simple and convenient laying of boards and also rapid dislodgement and exchange of, for example, a damaged board.

According to the invention, this is achieved by means of a device which is characterised in that it comprises a groove in the rear side of each board to be jointed, the groove running over the entire length of the board parallel to its jointing edge surface, and a substantially U-shaped spring device, the legs of which are adapted each to engage the groove of one board, and which is prestressed so that, upon said engagement, the boards are tightly clamped together edge surface to edge surface.

The invention will be described in more detail below, reference being made to the accompanying drawing, in which Fig. 1 shows partly broken boards from behind, jointed by means of the device according to the invention; Fig. 2 shows the arrangement of Fig. 1 as seen from the side, and Fig. 3 shows a U-shaped spring element.

The wooden boards 1 are provided in their bottom side with milled grooves 2 running parallel to and over the entire length of the board edge surface, abutting



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against one another in the assembled board arrangement,  
i.e. the floor. The cross section of the grooves 2 preferably is inclined towards these edges from the rear side of the boards. The legs of a U-shaped spring band,  
5 made of e.g. steel and having a substantially flat web, engage each with one groove 2 of each board. The spring is prestressed such that the legs thereof tightly compress the boards edge surface to edge surface. In addition, the board edge surface preferably form a tong-  
10 and-groove joint 4.

One leg 5 of the spring 3 preferably is so designed that its cross section is complementary to the inclined cross section of the grooves. During laying of the boards, this leg is first inserted in its groove in one board,  
15 and then the other leg, which also is directed inwardly, is snapped into its groove in the other board. As will appear especially from Fig. 2, the web of the spring band is in contact with the rear side of the jointed boards.

20 Several such spring devices may be arranged in spaced apart relation along the boards.

It will be evident that the invention allows a tight jointing of boards while making the joint arrangement invisible on the upper face of the floor.



## CLAIMS

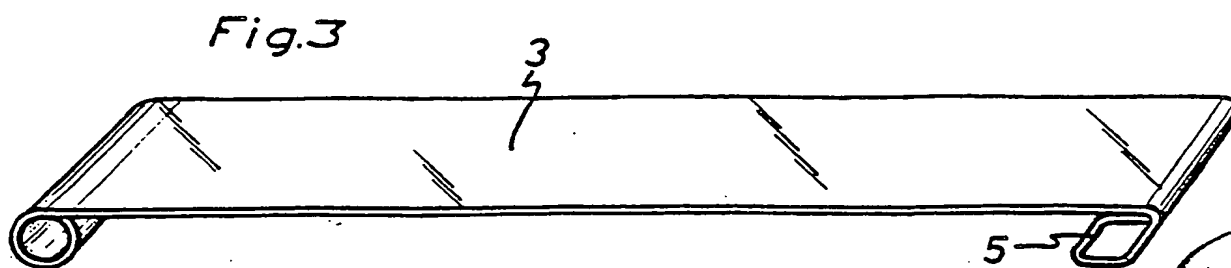
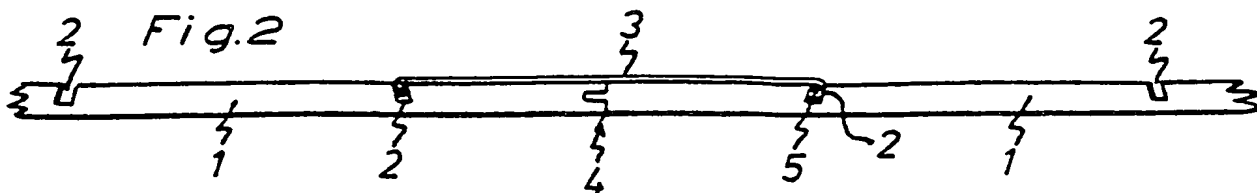
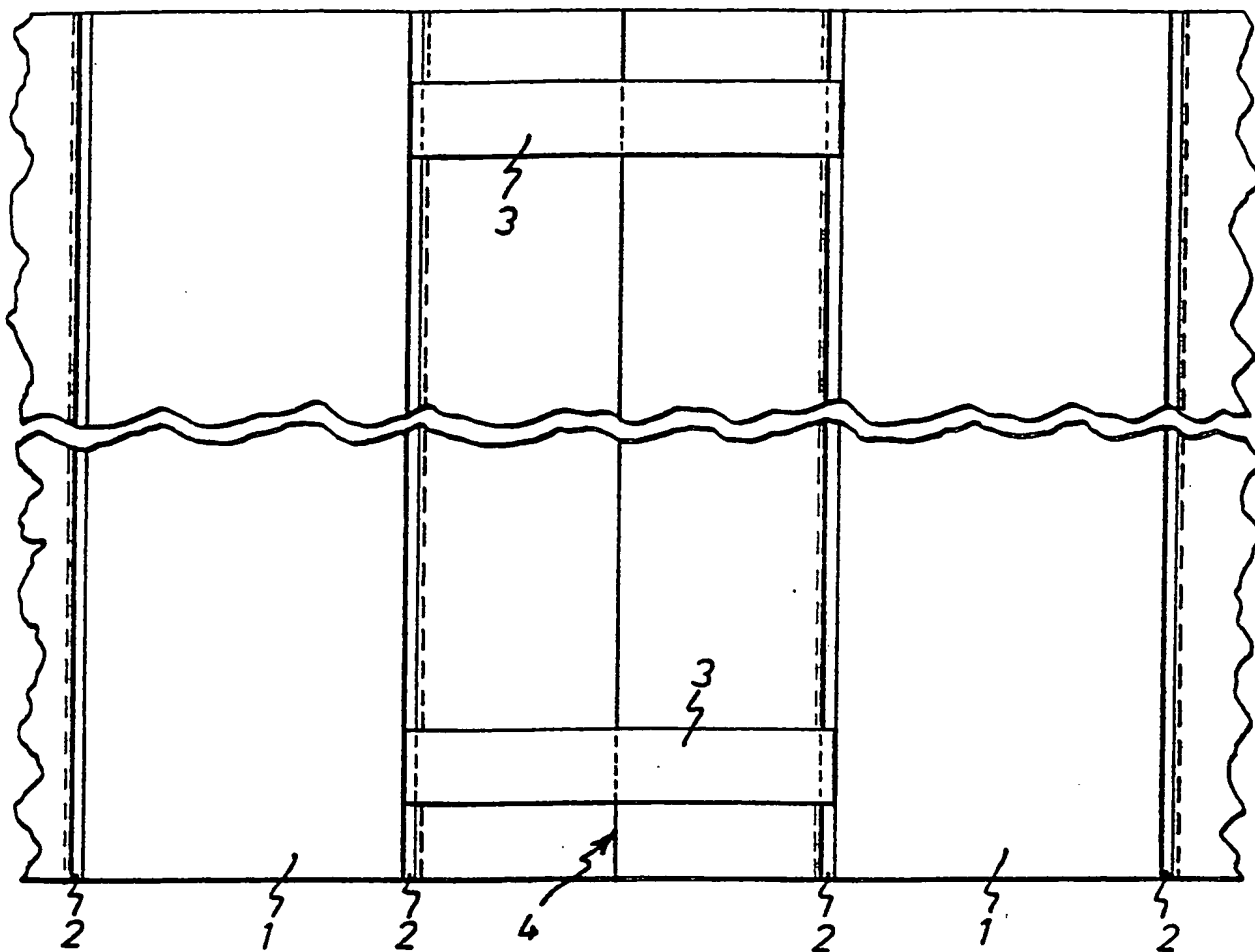
1. Device for joining together building boards, such as floor boards, edge surface to edge surface, characterised in that it comprises a groove (2) in the rear side of each board (1) to be jointed, the groove running over the entire length of the board parallel to its jointing edge surface, and a substantially U-shaped spring device (3), the legs (5) of which are adapted each to engage the groove of one board, and which is prestressed so that, upon said engagement, the boards are tightly clamped together edge surface to edge surface.

2. Device according to claim 1, characterised in that the cross section of the groove (2) is inclined towards the said edge surface, and that the spring device (3) is band-shaped and the cross section of one leg (5) is complementary to the cross section of the groove (2).



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Fig.1



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# INTERNATIONAL SEARCH REPORT

International Application No PCT/SE83/00423

<b>I. CLASSIFICATION OF SUBJECT MATTER</b> (if several classification symbols apply, indicate all) <sup>1</sup> According to International Patent Classification (IPC) or to both National Classification and IPC <sup>3</sup> <div style="text-align: center; margin-top: 10px;">E 04 F 15/14</div>											
<b>II. FIELDS SEARCHED</b> <div style="text-align: center; margin-top: 10px;">Minimum Documentation Searched <sup>4</sup></div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; padding: 5px;">Classification System</td> <td style="padding: 5px;">Classification Symbols</td> </tr> <tr> <td style="padding: 5px;">IPC 3 US C1</td> <td style="padding: 5px;">E 04 F 15/14, E 04 C 2/10-2/14 52: 511, 313</td> </tr> </table> <div style="text-align: center; margin-top: 10px;">Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched <sup>5</sup></div> <div style="text-align: center; margin-top: 20px;">SE, NO, DK, FI classes as above</div>			Classification System	Classification Symbols	IPC 3 US C1	E 04 F 15/14, E 04 C 2/10-2/14 52: 511, 313					
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<b>III. DOCUMENTS CONSIDERED TO BE RELEVANT</b> <sup>14</sup> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%; padding: 5px;">Category <sup>6</sup></th> <th style="width: 70%; padding: 5px;">Citation of Document, <sup>15</sup> with Indication, where appropriate, of the relevant passages <sup>17</sup></th> <th style="width: 20%; padding: 5px;">Relevant to Claim No. <sup>18</sup></th> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">X</td> <td style="padding: 5px;">SE, B, 372 051 (RY AB) 23 May 1973</td> <td style="text-align: center; vertical-align: top; padding: 5px;">1, 2</td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">Y</td> <td style="padding: 5px;">FR, B, 2 441 370 (ORENGO GILBERT) 30 October 1978</td> <td></td> </tr> </table>			Category <sup>6</sup>	Citation of Document, <sup>15</sup> with Indication, where appropriate, of the relevant passages <sup>17</sup>	Relevant to Claim No. <sup>18</sup>	X	SE, B, 372 051 (RY AB) 23 May 1973	1, 2	Y	FR, B, 2 441 370 (ORENGO GILBERT) 30 October 1978	
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<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><sup>*</sup> Special categories of cited documents: <sup>19</sup></p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"A" document member of the same patent family</p> </div> </div>											
<b>IV. CERTIFICATION</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">Date of the Actual Completion of the International Search <sup>1</sup></td> <td style="width: 50%; padding: 5px;">Date of Mailing of this International Search Report <sup>1</sup></td> </tr> <tr> <td style="padding: 5px;">1984-02-16</td> <td style="text-align: center; padding: 5px;">1984-03-02</td> </tr> <tr> <td style="padding: 5px;">International Searching Authority <sup>1</sup></td> <td style="padding: 5px;">Signature of Authorized Officer <sup>19</sup></td> </tr> <tr> <td style="padding: 5px;">Swedish Patent Office</td> <td style="text-align: center; padding: 5px;">Leif Törn </td> </tr> </table>			Date of the Actual Completion of the International Search <sup>1</sup>	Date of Mailing of this International Search Report <sup>1</sup>	1984-02-16	1984-03-02	International Searching Authority <sup>1</sup>	Signature of Authorized Officer <sup>19</sup>	Swedish Patent Office	Leif Törn	
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